

Pengaruh iradiasi sinar gamma terhadap sifat fisiko-kimia dan biologi membran pembalut luka kitosan/kolagen = Effects of gamma ray irradiation on physico chemical and biological properties of chitosan collagen wound dressing membranes / Fajar Lukitowati

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Abstrak

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Penelitian ini menganalisis pengaruh iradiasi sinar gamma terhadap sifat-sifat fisiko-kimia dan biologi membran kitosan, kolagen, dan paduan kitosan/kolagen. Membran kitosan, kolagen, dan kitosan/kolagen dibuat dengan penguapan pelarut dan membran diiradiasi sinar gamma (0, 15 atau 25 kGy). Pengujian untuk mengamati gugus fungsi, kuat tarik, perpanjangan putus, daya serap air, permeabilitas, sterilitas serta daya tembus mikroba. Data diuji statistik. Terdapat perubahan gugus fungsi, penurunan kuat tarik, perpanjangan putus, daya serap air dan permeabilitas membran serta kenaikan sterilitas pada membran tanpa dan dengan iradiasi, kecuali untuk daya tembus mikroba. Iradiasi sinar gamma pada semua membran menimbulkan perubahan sifat fisiko-kimia dan sterilitas

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**ABSTRACT**

The objectives of this study is to analyze the effects of gamma-ray irradiation to physico-chemical and biological properties chitosan, collagen and blend of chitosan/collagen membranes. The solvent evaporation technique is used to prepare chitosan, collagen and chitosan/collagen membranes, and sterilized by gamma-ray irradiation (with dose of 0, 15 or 25 kGy). Functional groups, mechanical strength, water retention, permeability, sterility and microbial penetration are observed. The data was analyze statistically. Functional groups, tensile strength, elongation at breaks, water retention, permeability, and sterility are changes, except for microbial penetration. Gamma-ray irradiation on chitosan, collagen and blend of chitosan/collagen membranes shows changes of physico-chemical and sterility.